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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/606,961	06/29/2000	James P. Rodrigues	MS 150530.1/40062.69US01	7182

7590 03/13/2003

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EXAMINER

KISS, ERIC B

ART UNIT	PAPER NUMBER
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2122

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/606,961

Applicant(s)

RODRIGUES ET AL.

Examiner

Eric B. Kiss

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 and 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-27 have been examined.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "212" has been used to designate both a hard disk drive and a BIOS. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "131", "132", and "133" in Fig. 1; "411", "412", and "413" in Fig. 4; "713" in Fig. 7; and "813" in Fig. 8. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The abstract of the disclosure is objected to because it exceeds 150 words in length.

Correction is required. See MPEP § 608.01(b).

5. The disclosure is objected to because of the following informalities: The Brief Description of the Drawings makes reference to Figure 5, while two separate figures, 5A and 5B are present in the application. The figures illustrate different features, i.e. a sample data structure and a sample data file, and should be summarized separately. Appropriate correction is required.

Claim Objections

6. Claim 13 is objected to because of the following informalities: “generates” in line 9 should read --generating--. Appropriate correction is required.

7. Claims 10-12 are objected to because of the following informalities: “related” in line 2 of each claim should read --related to the--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,158,049 to Goodwin et al. in view of U.S. Patent No. 6,349,406 to Levine et al.

As per claim 1, *Goodwin et al.* disclose a computing system (see Fig. 1) for obtaining run-time internal state data within an application program, the computing system comprising:

a init module for determining if the run-time internal state data is to be collected during the operation of the application program (see registry entry description in column 10, line 59 through column 11, line 42);

a performance code marker module for obtaining and storing the run-time internal state data for later retrieval (see column 6, lines 46-64); and

an uninit module for formatting and storing the obtained run-time internal state data into memory that permits retrieval after the termination of the application program (profile data is stored in a profile optimizer database; see column 6, lines 50-52);

wherein

the init module is executed before any run-time internal state data is collected (the application program is instrumented before it is executed); and

the performance code marker module is executed each time run-time internal state data is to be collected (profile data is generated during execution; see Fig. 2).

Goodwin et al. fail to expressly disclose the uninit module being executed after all run-time internal state data desired has been collected. However, *Levine et al.* teach formatting and

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storing obtained run-time internal state data after tracing is finished (sending buffer contents to a file and generating a report; see Figs. 4 and 6 and the associated text in columns 9 and 11).

Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to modify the system of *Goodwin et al.* to include formatting and storing obtained run-time internal state data after tracing is finished as per the teaching of *Levine et al.* One would be motivated to do so to reduce computational overhead while executing a debugger process.

As per claim 2, *Goodwin et al.* further disclose the init module determining if run-time internal state data is to be collected (see registry entry description in column 10, line 59 through column 11, line 42). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claims 3 and 4, *Goodwin et al.* further disclose the init module making the determination that run-time internal state data is to be collected by checking for the existence of an identification key within a system registry and checking for the existence of processing modules identified by the identification key (the registry key points to the instrumented executable and instructs the operating system to run the instrumented version; see column 11, lines 16-42; if the instrumented module identified by the system registry does not exist, it is inherent that tracing will not proceed). Therefore, for reasons stated above, such claims also would have been obvious.

As per claim 5, *Goodwin et al.* further disclose the performance code marker module collecting run-time internal state data only if the init module has determined that the run-time internal state data is to be collected (if the registry key instructing the operating system to run the

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instrumented executable is not present, the operating system executes the non-instrumented version; see column 10, line 59 through column 11, line 42). Therefore, for reasons stated above, such claims also would have been obvious.

As per claims 6-8, in addition to the disclosure and teachings applied above, *Goodwin et al.* further disclose generating, storing, and retrieving a performance data record containing the collected-run time internal state data (profile data is stored in a profile optimizer database as records; see column 6, lines 50-52). Therefore, for reasons stated above, such claims also would have been obvious.

As per claims 9, 10, and 12, *Goodwin et al.* fail to expressly disclose the run-time internal state data comprising benchmark timing data, memory usage data, and open file usage data. However, *Levine et al.* further teach the use of a trace tool to gather such data (see column 15, lines 1-10; and column 17, lines 26-35; benchmark timing data and memory usage are furthermore considered to be related to the state of the currently open files). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to further modify the system of *Goodwin et al.* to include gathering and processing benchmark timing data and memory usage data as per the teachings of *Levine et al.* One would be motivated to do so to be able to determine how and when system resources are being used.

As per claim 11, *Goodwin et al.* disclose run-time internal state data comprising system registry usage data (see column 10, lines 63-67). Therefore, for reasons stated above, such claims also would have been obvious.

As per claim 13, *Goodwin et al.* disclose a method for obtaining run-time internal state data within an application program, the method comprising:

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inserting one or more code markers into the application program at locations within the application program corresponding to the point at which run-time internal state data is desired (instrumenting the code; see column 10, lines 40-51);

determining if run-time internal state data is to be collected at each code marker by checking for the existence of processing modules identified by an identification key within a system registry (see registry entry description in column 10, line 59 through column 11, line 42);

if the run-time internal state data is to be collected at each code marker:

generating a performance data record containing the collected run-time internal state data each time the code markers are reached (see column 6, lines 46-64);

Goodwin et al. fail to expressly disclose storing the performance data records within a data memory block within the processing modules and retrieving the performance data records from the data memory block for transfer to a mass storage device once all of the run-time internal state data has been collected. However, *Levine et al.* teach the use of a trace data buffer allocated by the trace processor for storing trace data generated during a debugging process and outputting the data from the buffer to a file for post-processing after tracing is complete (see Fig. 6 and its associated text in column 11). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to modify the method of *Goodwin et al.* to include storing performance data records in a data memory block within a processing module for subsequent transfer to a mass storage device upon completion of tracing as per the teachings of *Levine et al.* One would be motivated to do so to reduce computational overhead while executing a debugger process.

As per claims 14-17, see the rationale applied above with respect to claims 9-12.

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As per claim 18, this is a product version of the claimed method discussed above (claim 13). Furthermore, such a computer-readable product is inherently required by the system of *Goodwin et al.*, and all other limitations have been addressed as set forth above. Therefore, for reasons stated above with respect to claim 13, such a claim also would have been obvious.

As per claims 19 and 20, see the rationale applied above with respect to claims 3 and 4.

As per claim 21, *Goodwin et al.* fail to expressly disclose the data memory block being within the processing module. However, *Levine et al.* teach the use of a trace data buffer allocated by the trace processor for storing trace data generated during a debugging process. Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to further modify the product of *Goodwin et al.* to include the data memory block being within the processing module as per the teaching of *Levine et al.* One would be motivated to do so to reduce computational overhead while executing a debugger process.

As per claims 22-25, see the rationale applied above with respect to claims 9-12.

As per claim 26 and 27, official notice is taken that it was well known and practiced at the time the invention was made to encode computer program instructions on such computer-readable storage media and propagated signals on carriers for the purpose of storing and transmitting the instructions during their implementation. Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to further modify the product of *Goodwin et al.* to include such storage media and propagated signals as they are well-suited to embodying such program instructions.

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Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Kiss whose telephone number is (703) 305-7737. The examiner can normally be reached on Tue. - Fri., 7:30 am - 5:00 pm. The examiner can also be reached on alternate Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse can be reached on (703) 308-4789.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, DC 20231

Or faxed to:

(703) 746-7239 (for formal communications intended for entry)

Or:

(703) 746-7240 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, 22202, Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

EBK /EBK
March 5, 2003


ANIL KHATRI
PRIMARY EXAMINER